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ABSTRACT

The study's purpose was to: (1) identify factors affecting college students' academic performance measured by college grade point average (GPA) and persistence identified by whether or not withdrawn from the university initially attended; and (2) compare these factors among Black, Mexican American, and Anglo students. Data were obtained from the students' data files in the Admissions Office of the University under investigation. Two samples were analyzed: (1) a larger sample including all identifiable Blacks (216), Mexican Americans (397), and a random sample of Anglo students (3,202) who entered the University between 1970 and 1974; and (2) a subsample of the larger one including only those students who entered the University during 1973 and 1974 and whose high school information was available in their data file (392 students). High school data was included only in the subsample's analysis. Some findings were: (1) high school information was important in predicting a student's college academic performance; (2) high school GPA and the Scholastic Aptitude Test scores continued to dominate the predictability of a student's college GPA; and (3) college GPA did not enhance a student's college persistence but, on the contrary, it hindered his persistence. (NQ)

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FACTORS AFFECTING ACADEMIC PERFORMANCE AND PERSISTENCE AMONG THE MEXICAN-AMERICAN, THE BLACK AND THE ANGLO STUDENTS IN A SOUTHWESTERN UNIVERSITY

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INTRODUCTION

The purpose of this study is two-fold: (1) to identify factors affecting college students' academic performance measured in terms of college GPA and persistence identified in terms of whether or not withdrawn from the university initially attended;[1] and (2) to make a comparison of these factors among the Black, the Mexican-American and the Anglo students.[2] There are several obvious reasons for us to be interested in these two problems.

First of all, it is a common belief that college academic performance is a good indication of a student's true ability and achievement. It is for this reason that a student graduated from a college with a high GPA or grade is believed to be in a better position to be recruited by prospective employers. (A high GPA of course is essential for a student to enter into other professional schools such as medical and law schools.) Thus, college academic performance becomes an important initial step toward occupational attainment and the subsequent process of social stratification.

Second, it is a well known fact that this society is geared into the so-called "credentialism" or "certification." Thus, a person can be very well read and well learned as an individual, and yet, without a college diploma, it would be extremely difficult for him to enter professional or other white collar professions. For this reason, it is important to identify those factors which contribute significantly to the student's persistence in college. This point is particularly relevant to the minorities since it is a common belief that minority students are more likely than non-minority students to withdraw from colleges and universities. In light of the many efforts to bridge the gap of socioeconomic status between the

minorities and nonminorities, the problem of college persistence can become a very fundamental issue.

It is our wish that the analyses reported in this paper will provide the reader and other people concerned with some useful information about a specific university and perhaps point out some of the research strategies and data collection problems. Hopefully, the study will thus provide a useful guide for further research and data collection in this area.

DATA COLLECTION AND ANALYSES

The data used in this study are obtained from the students' data files in the Admissions Office of the University under investigation.[3] Due to the availability of data, two separate samples, a larger one and a smaller one, are analyzed. The larger sample was drawn in the following manner: We included all identifiable Black (N=216), Mexican-American (N=397) and a random sample of Anglo students (N=3202) who entered the University during the period 1970 to 1974.[4] None of the high school data was included in the analysis for this sample. The variables included in the analysis and the results are reported in Tables 1 and 2. A discussion of these results will be made later in this section.

Tables 1 and 2 about here

The smaller sample is in fact a subsample of the larger sample. It included those in the larger sample who entered the University during 1973 and 1974 and whose high school information was available in the student's information file. As a result of this sampling procedure, we obtained the smaller sample which included Black (N=25), Mexican-American (N=52), and Anglo (N=315) with a total of 392 students. The variables included in the

analysis and their results are shown in Tables 3 and 4.

Tables 3 and 4 about here

DISCUSSION

An examination of Tables 1, 2, 3, and 4 clearly reveals the importance of high school information in predicting a student's college academic performance (R^2 = .128, N=3815; R^2 = .451, N=392). (College grade will be used in the subsequent discussion to economize the wording.) Furthermore, a student's high school information such as SAT scores and high school GPA tend to explain most of the variation of one's college grade. (R^2 = .417 as shown.) In other words, all one needs to know in order to predict a student's college grade are those of his or her high school grades and SAT scores. Information concerning a student's college life gathered in this study becomes relatively unimportant. This finding is unfortunately not much different from that of most other studies (Chronbach, 1949; Henry, 1950; Friedhoff, 1955; Swensen, 1957; Lavin, 1965; and Astin, 1971). It appears that it would be disheartening for college personnel such as counselors and academic advisors, etc. to try to help improve a student's grade. However, the same is not true for the college persistence.

For the sake of clarity, we shall interpret the results under three separate categories. The first will include those results without a student's high school information. The second will include those results with a student's high school information. And finally, we shall make a comparison (of these factors, i.e., the independent variables) among the three different ethnic groups, namely, the Black, the Mexican-American and the

Anglo students. Since the sample size for the Black and the Mexican-American is too small to yield a meaningful result, the comparison is limited to those without a student's high school information.

Without High School Data

As shown in Table 1, each of the following per se is a significant contributing factor in predicting a student's high college grade:

a. Having a high degree-aspiration
b. Being a student in a non-professional school, i.e. college of Arts and Sciences
c. Being a woman
d. Being an Anglo
e. Being an out-of-state student
f. Receiving social security benefit
g. Not being a veteran benefit recipient
h. Being a sorority-fraternity member
i. Living on campus

None of these findings appears to be counter-intuitive and requires further discussion. However, one should realize that though they are all significant predicting factors to a student's college grade, they explain altogether a rather limited amount of variation of a student's grade (R^2 = .128). What this means is that we need to know more in order to make a better prediction of a student's college grade besides those attributes of his (her) college life stated here. (See, for examples, Stanley and Porter, 1969; Sampel and Seymour, 1968; and Ivanoff, 1961.)

Factors affecting a student's high college persistence as shown in Table 2 appear to be quite different from those of college grade. (In

fact, some of them appear to be running in the opposite direction.) Each of the following per se contributes significantly to a student's high college-persistence:

a. Having a low degree-aspiration

b. Being a student in non-professional school, i.e. Arts and Sciences

c. Being a non-high-school entrant, i.e. a transfer, a return veteran, a housewife, etc.

d. Not being a member of a sorority-fraternity

e. Living off campus

f. Having a low college grade

Some obvious counter-intuitive findings have been shown here, i.e. points a, d, and f above. Stated briefly, students with a good academic aspiration and standing and who are active in campus life, contrary to our intuition and some previous findings, are more likely to withdraw from the University.[5] The only reasonable speculative explanation that we can come up with is as follows: It is quite possible that a high percentage of students with good academic aspiration and standing and who were also active in their campus life actually transferred to other institutions before they graduated from this University. This speculation precisely points out the weakness of the variable used, i.e. college persistence. (See explanation about the variable, college persistence, above.) Thus, it seems to be the first order of business to do a follow-up study on those who withdrew from this University. (This, as will be seen later, is also true to every racial group, i.e. the Black, the Mexican-American and the Anglo.)

Finding c points to the fact that a non-high-school entrant, e.g. a transferred student, a return veteran or an elder person, was more likely than a high school graduate to stay on until he or she graduated from this University. This seems to make intuitive sense since they usually enter a college on their own choice. Finding b points to the simple fact that a student in Arts and Sciences is less likely to withdraw or leave the University. However, one should recognize that the total variation explained by these factors is very limited (R^2 = .085). Further studies would be required to make a better understanding and prediction about college persistence.

With High School Data

When a student's high school data are included in the regression equation, the results appear to be rather different. The best predictors for a student's college grade turn out to be his or her high school characteristics. In fact, some of the college characteristics reported above which were significant predicting factors to a student's college grade are no longer significant factors in this new system of regression equation. Table 3 shows the results and can be stated as follows:

a. High high-school grade per se increases college grades.

b. High SAT scores, both mathematics and verbal, per se increase college grade.

These are by no means unexpected findings. The fact that high school grades and SAT scores continue to dominate the impact on a student's college grade indicates some interesting points. First, it points to the fact that in order to improve a student's college grade, work needs to be done at the secondary school level. This of course does not help the college personnel

who try to help these poor performers, especially the ethnic minorities. Second, for this reason, significant college characteristics which affect a student's college grade--if indeed there are any such characteristics--need to be identified, in order for the college to be able to provide effective services.

Table 4 reports the significant predicting factors to a student's college persistence. As one can note, the high school characteristics completely disappear from here. The results can be stated as follows:

a. Being a man per se increases the college persistence.

b. Having a low college grade per se increases college persistence.

c. Being an Anglo per se increases college persistence.

Perhaps it is understandable that women are more likely to withdraw from college for the simple reason that many of them would get married and withdraw at least temporarily from a college. Furthermore, in this still more or less male dominant society, women are more vulnerable when it comes to the point that someone in the family needs to sacrifice a college education due to financial or other reasons. This and point c together indicate that women and other non-Anglo minorities have a lot to do to catch up to bridge the educational gap with Anglo men. This would be different if, as indicated above, women and minorities are part of those who transferred to other institutions. This is another reason why it is important to follow up those who withdrew. Point b above merely re-emphasizes the fact that college grade per se increases the likelihood of withdrawal from this university.

A Comparison of Three Ethnic Groups

Table 5 shows the factors affecting a student's college grade among the Black, the Mexican-American and the Anglo students. Several interesting patterns do appear. First, the proportion of variation explained is relatively small for all three groups. It means that these are not good predicting factors to a student's college grade whether to a Black, a Mexican-American or an Anglo.[6] Second, it shows consistently among the three groups that being an out-of-state student per se increases college grade. Since the University's policy is to admit only those out-of-state students whose high school ranks are in the top 50%, it appears reasonable to expect a significant impact of this factor, residency, on students' college grade.

Third, for all except the Black group, being a woman per se increases college grade (although Black women also tend to do better than Black men, see r = -.133 in Table 5). Finally, being a member of a sorority-fraternity per se shows a significant positive effect on a student's college grade for both the Black and the Anglo groups. The insignificant effect of this variable on a Mexican-American student's college grade could be due to the fact that only a very small proportion of them joins sorority-fraternity groups. (One percent of Mexican-American students joins a sorority-fraternity in our sample, while 16 percent Black and 17 percent of Anglos join a sorority-fraternity.) This means that membership in a sorority-fraternity does not mean too much as a part of group life to the Mexican-American students on the college campus.

There are other differences among these three groups that need to be discussed. To a Black, being a church member per se decreases college grade. However, this is not the case for the Mexican-American and the

Anglo groups. The Anglo group appears to be affected more by the college characteristics included in this analysis. This, on the other hand, is not true for the other two groups. Among those predictors that appear to be significantly and positively affecting an Anglo's college grade are:

a. Having high degree-aspiration per se

b. Being a student in a non-professional school per se

c. Being a social security benefit recipient per se

d. Living on campus per se

These in general overlap with those discussed earlier when all three groups were lumped together. (See the discussion on the section, Without High School Data.)

Table 6 shows the factors affecting a student's college persistence among the Black, the Mexican-American and the Anglo. Several almost uniform patterns can be depicted from this Table. First, all three groups show that high college grade per se decreases college persistence. We argued earlier that this could be due to the fact that a high percentage of them transferred to other institutions. This speculative explanation requires further research to verify. Second, all three groups show that being in a professional school per se decreases college persistence. Once again, this appears to be counter-intuitive. One would expect that a student in a professional school is more career oriented and therefore is more future oriented than a student in a non-professional school. A future oriented person is more likely to postpone immediate gratification and therefore is more likely to bear hardship and less likely to withdraw from a college than is a person who is not future oriented. This same is true in the case that for all except the Mexican-American, high degree aspiration

per se decreases college persistence. Again, we need to find out whether those who withdrew did actually transfer to other institutions before we can draw a more definite conclusion.

It is interesting to note, however, that church membership per se increases college persistence to the Mexican-American students. This is a good indication that church (mostly Catholic) does provide a group stabilizing factor for the Mexican-American community. Finally, being a member of a sorority-fraternity per se decreases college persistence in the Anglo group. One would normally expect that small group life as such would provide some stabilizing factor for its members.

CONCLUSION

Several interesting results are found in this study. First, we have found that high school grade and SAT scores continue to dominate the predictability of a student's college grade. We expressed our misgiving of this result. Second, we found that college grade does not enhance a student's college persistence, but, on the contrary, it does hinder the persistence. This is true to all three racial groups. We indicated that this could be due to the nature of the variable, college persistence, used in this study. We urged an immediate follow-up study to verify our explanation about this. The same is true for several other factors, such as being a professional student, and being a member in a sorority-fraternity. Third, we found that although high school attributes tend to affect a student's college grade a great deal, they do not show a significant impact on a student's college persistence. This is a good indication that college grade and college persistence are two rather separate phenomena and perhaps should be treated separately.

We have learned that the information gathered by the Admissions Office in the student's information file does not prove relevant in predicting a student's college grade ~~or~~ or his or her college persistence. However, one must realize that the Admissions Office did not collect the students' information for this particular purpose only. We suggested that in order for the university personnel to perform more effective services to help improve a student's grade and persistence--especially the minorities--other important variables need to be identified. For example, one might want to consider the effects of counseling and special services programs on a student's grade and persistence in college.

TABLE 1

Correlation Coefficients (r) and Beta Weights (β) of the Independent Variables in the Regression Equation for the Dependent Variable: College GPA (high) (N = 3815, R^2 = .128)

Independent Variable	r	β
2. Degree aspiration (high)	.066	.047[b]
3. School (professional)	-.105	-.100[b]
4. Sex (male)	-.250[a]	-.215[b]
5. Race (Anglo)	.214	.194[b]
6. Residency (in state)	-.044	-.067[b]
7. Method of entrance (high school)	.034	-.014
8. Athletic scholarship (yes)	-.028	-.005
9. Social security aid (yes)	.036	.036[b]
10. VA benefit (yes)	-.117[a]	-.049[b]
11. War-orphan aid (yes)	.008	.004
12. Sorority-fraternity membership (yes)	.100[a]	.055[b]
13. Church membership (yes)	-.019	-.011
14. Housing (on campus)	.098	.039[b]

[a] Significant beyond .05 level

[b] Significant beyond .05 level using two-tail t test

TABLE 2

Correlation Coefficients (r) and Beta Weights (β) of the Independent Variables in the Regression Equation for the Dependent Variable: College Persistence (yes)* (N = 3815, R^2=.085)

Independent Variable	r	β
2. Degree aspiration (high)	-.106[a]	-.082[b]
3. School (professional)	-.069	-.099[b]
4. Sex (male)	.069	.003
5. Race (Anglo)	-.053	.021
6. Residency (in state)	-.018	-.025
7. Method of entrance (high school)	-.066	-.036[b]
8. Athletic scholarship (yes)	-.017	-.023
9. Social security aid (yes)	-.006	.002
10. VA benefit (yes)	.037	-.001
11. War-orphan aid (yes)	-.010	-.005
12. Sorority-fraternity membership (yes)	-.071	-.031[b]
13. Church membership (yes)	-.003	-.006
14. Housing (on campus)	-.083	-.053[b]
15. College GPA (high)	-.245[a]	-.246[b]

* College persistence refers to those who once withdrew from the University during the period 1970-1974. No information was available, however, concerning whether or not these students did transfer to other institutions or return to the University after their withdrawal. Thus, the results shown in this Table should be interpreted with caution.

[a] Significant beyond .05 level

[b] Significant beyond .05 level using two-tail t test

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TABLE 3

Correlation Coefficients (r) and Beta Weights (β)
in Regression Equation for the Dependent Variable: College GPA (high)
(N = 392, R^2 = .451)

Independent Variable	r	β	R^2	
2. Degree aspiration (high)	.031	.026		
3. School (professional)	.021	.091		
4. Sex (male)	-.063	.001		
5. Residency (in state)	-.046	-.034		
6. Method of entrance (from high school)	.039	-.023		
7. Athletic scholarship (yes)	-.043	-.018		
8. Social security aid (yes)	.021	.053		
9. Veteran benefit (yes)	.068	.017		
10. War-orphan benefit (yes)	.004	-.058		
11. Sorority-fraternity membership (yes)	.115	.099		
12. Church membership (yes)	-.014	-.065		
13. Housing (on campus)	-.066	.001		
15. SAT verbal (high)	.505[b]	.219[a]	.079	.417
16. SAT math (high)	.478[b]	.142[a]	.012	
17. High school size (large)	-.015	-.005		
18. High school GPA (high)	.569[b]	.423[a]	.324	
19. Race 1 (Black)[c]	-.168	-.053		
20. Race 2 (Mexican-American)[d]	-.137	-.011		

[a] Significant beyond .05 level using two-tail t test $t = b/b_{se}$

[b] Significant beyond .05 level

[c] Black (1) vs. Non-Black (0)

[d] Mexican-American (1) vs. Non-Mexican-American (0)

TABLE 4

Simple Correlation Coefficients (r) and Beta Weights (β) in Regression Equation for the Dependent Variable: College Persistence ($N = 392$, $R^2 = .233$)

Independent Variable	r	β
2. Degree aspiration (high)	.058	.034
3. School (professional)	.028	-.075
4. Sex (male)	.317[b]	.336[a]
5. Residency (in state)	-.094	-.025
6. Method of entrance (from high school)	-.081	-.093
7. Athletic scholarship (yes)	-.002	-.034
8. Social security aid (yes)	.018	.041
9. Veteran benefit (yes)	.059	.067
10. War-orphan benefit (yes)	-.033	-.041
11. Sorority-fraternity membership (yes)	-.081	-.058
12. Church membership (yes)	-.006	-.006
13. Housing (on campus)	.038	.049
14. Texas Tech GPA	-.236[b]	-.195[a]
15. SAT verbal (high)	-.083	.019
16. SAT math (high)	-.083	-.142
17. High school size (large)	-.033	-.087
18. High school GPA (high)	-.250[b]	-.031
19. Race 1 (Black)[c]	-.076	-.163[a]
20. Race 2 (Mexican-American)[d]	-.099	-.243[a]

[a] Significant beyond .05 level using two-tail t test $t = b/b_{se}$

[b] Significant beyond .05 level

[c] Black (1) vs. Non-Black (0)

[d] Mexican-American vs. Non-Mexican-American (0)

TABLE 5

Correlation Coefficients (r) and Beta Weights (β)
of the Independent Variables in the Regression Equation for the Dependent Variable:
College Grade (high) for the Black, Mexican-American and the Anglo

		Black (N=216, R^2=.060)		Mexican-American (N=397, R^2=.094)		Anglo (N=3202, R^2=.092)	
	Independent Variable	r	β	r	β	r	β
2.	Degree aspiration (high)	.082	.052	.074	.084	.042	.036[b]
3.	College (professional)	.012	-.041	-.073	-.088	-.130	-.108[b]
4.	Sex (male)	-.133[a]	-.044	-.201	-.172[b]	-.254	-.228[b]
5.	Residency (in state)	-.133[a]	-.152[b]	-.099	-.103[b]	-.046	-.056[b]
6.	Method of entrance (high school)	.008	-.025	-.001	-.043	.043	-.001
7.	Athletic scholarship (yes)	.023	.006	-.025	-.028	-.019	-.003
8.	Social security benefit (yes)	.038	-.038	.113	.074	.046	.045[b]
9.	Veteran benefit (yes)	-.102	-.092	-.118	-.050	-.096	-.047[b]
10.	War-orphan aid (yes)	*	.045	*	.00	.007	.004
11.	Sorority-fraternity membership (yes)	.233[a]	.214[b]	.069	.070	.077	.057[b]
12.	Church membership (yes)	-.118[a]	-.117[b]	.081	.091	-.025	.002
13.	Housing (on campus)	.061	.051	.109	.080	.094	.046[b]

* The coefficient cannot be computed using SPSS regression routine

[a] Significant beyond .05 level

[b] Significant beyond .05 level using two-tail t test

TABLE 6

Correlation Coefficients (r) and Beta Weights (β)
of the Independent Variables in the Regression Equation for the Dependent Variable:
College Persistence (high) for the Black, Mexican-American and the Anglo

		Black (N=216, R^2=.171)		Mexican-American (N=397, R^2=.060)		Anglo (N=3202, R^2= .088)	
	Independent Variable	r	β	r	β	r	β
2.	Degree aspiration (high)	-.164	-.114[b]	-.060	-.054	-.075	-.058[b]
3.	College (professional)	-.146	-.147[b]	-.041	-.076[b]	-.070	-.108[b]
4.	Sex (male)	.090	.050	.010	-.047	.061	-.008
5.	Residency (in state)	.058	.022	-.019	-.044	.003	-.004
6.	Method of entrance (high school)	-.058	-.076	-.021	-.019	-.057	-.022
7.	Athletic scholarship (yes)	.00	-.002	-.026	-.039	-.021	-.018
8.	Social security benefit (yes)	.08	.050	-.034	-.032	-.004	.006
9.	Veteran benefit (yes)	-.007	-.080	.073	.067	.038	.002
10.	War-orphan aid (yes)	-.016	.013	*	.00	-.018	-.014
11.	Sorority-fraternity membership (yes)	-.106	.020	-.030	-.004	-.068	-.035[b]
12.	Church membership (yes)	.027	-.019	.126	.143[b]	-.002	-.007
13.	Housing (on campus)	.00	.034	-.036	-.009	-.106	-.082[b]
14.	College grade (high)	-.348	-.341[b]	-.159	-.177[b]	-.250	-.253[b]

* The coefficient cannot be computed using SPSS regression routine.

[a] Significant beyond .05 level

[b] Significant beyond .05 level using two-tail t test

FOOTNOTES

[1]Since the only data available to us is whether or not a student has ever withdrawn from this university, it is quite possible that a student who withdrew from this university might actually transfer to other institutions or later return to this university. In both cases, they are considered withdrawal in this study.

[2]The classification of race is determined by the students themselves.

[3]The kind cooperation and assistance of the Admissions Office in furnishing the data for this study are greatly acknowledged. Special thanks is due to Mr. Paul Mackey of the Admissions Office.

[4]Students who failed to identify their own racial background for one reason or another are excluded from this sample.

[5]See for example, Bayer (1968), Folger (1970), Jones (1972), and Yuker (1972).

[6]For studies dealing with factors predicting ethnic minorities' academic performance, see for examples, Clark and Plotkin, 1963; Pfeifer, Jr. and Sedlacek, 1970; and Cleary, 1968.

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